

**AMENDMENTS TO THE CLAIMS**

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double-bracketed text indicating deletions.

**Listing of Claims**

1. (Currently Amended) A method for creating a nuclear reactor core template, comprising:

selectively assigning, using a graphical user interface providing a graphical representation of a nuclear reactor core, fuel bundle categories to fuel bundle positions in the graphical representation to create a template having as constraints that only a fuel bundle matching the assigned fuel bundle categories to the fuel bundle positions be allowed to be loaded in the fuel bundle position, one of the fuel bundle categories being reinserted fuel bundles; and

automatically assigning a priority to each of the fuel bundle positions assigned the reinserted category, the priority indicating an order for loading exposed fuel bundles based on an attribute of the exposed fuel bundles.

2. (Original) The method of claim 1, wherein the fuel bundle categories include fresh and locked, the fresh category indicating to insert an unexposed fuel bundle, the locked category indicating that a fuel bundle currently

occupying an associated fuel bundle position in an actual nuclear reactor core remains in that position in creating a new nuclear reactor core loading map.

3. (Original) The method of claim 2, wherein the fuel bundle categories further include reinserted, the reinserted category indicates to insert a fuel bundle that has been exposed.

4. (Original) The method of claim 1, wherein the selectively assigning step includes setting a bundle group amount for a selected one of the fuel bundle categories, and selectively assigning the set bundle group amount of the selected fuel bundle category.

5. (Previously Presented) The method of claim 1, wherein the selectively assigning step includes selectively setting a symmetry associated with the set bundle group amount, the symmetry indicating whether to repeat the selected fuel bundle category symmetrically in one or more quadrants of the graphical representation of the nuclear reactor core.

6. (Original) The method of claim 1, wherein  
at least one category is fresh, the fresh category indicating to insert an unexposed fuel bundle; and  
the selectively assigning step includes assigning a type designation to the fuel bundle positions assigned the fresh fuel bundle category.

7. (Original) The method of claim 1, wherein  
at least one category is reinserted fuel bundles, the reinserted category  
indicates to insert a fuel bundle that has been exposed; and  
the selectively assigning step including manually assigning a priority to  
each of the fuel bundle positions assigned the reinserted category, the priority  
indicating an order for loading exposed fuel bundles based on an attribute of  
the exposed fuel bundles.
8. (Cancelled)
9. (Cancelled)
10. (Previously Presented) The method of claim 1, wherein the step of  
creating the template comprises editing an existing nuclear reactor core  
template by changing a fuel bundle category assigned to at least one fuel  
bundle position in the template.
11. (Original) The method of claim 10, wherein the fuel bundle categories  
include at least one of fresh, locked and reinserted, the fresh category  
indicating to insert an unexposed fuel bundle, the locked category indicating  
that a fuel bundle currently occupying an associated fuel bundle position in an  
actual nuclear reactor core remains in that position in creating a new nuclear

reactor core loading map, and the reinserted category indicates to insert a fuel bundle that has been exposed.

12. (Cancelled)

13. (Previously Presented) The method of claim 10, wherein creating the existing nuclear reactor core template step comprises:

accessing a database of templates; and  
selecting one of the templates for editing.

14. (Previously Presented) The method of claim 1, wherein the step of creating the template comprises:

deriving a loading template from a loading map of a selected cycle of nuclear reactor based on the user input parameters.

15. (Original) The method of claim 14, wherein the deriving step derives the loading template from the loading map of the selected cycle of the nuclear reactor and the loading map of a cycle previous to the selected cycle.

16. (Currently Amended) An apparatus for creating a nuclear reactor core template comprising:

a graphical user interface; and

a processor controlling the graphical user interface to display a graphical representation of a nuclear reactor core, and to provide a user with graphical tools for at least one of assigning fuel bundle categories to fuel bundle positions in the graphical representation and editing assigned fuel bundle categories to the fuel bundle positions in the graphical representation to create a template having as constraints that only a fuel bundle matching the assigned fuel bundle categories to the fuel bundle positions be allowed to be loaded in the fuel bundle position, one of the fuel bundle categories being reinserted fuel bundles, the processor automatically assigning a priority to each of the fuel bundle positions assigned the reinserted category, the priority indicating an order for loading exposed fuel bundles based on an attribute of the exposed fuel bundles.

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END OF CLAIM LISTING